



STUDY IN BLACK AND WHITE—The stark contrasts of black shadows and intense sunlight glare Apollo crewmen will encounter during rendezvous are simulated in the laboratory using scale models of the Lunar Module which duplicate sunlight reflecting properties of the actual spacecraft. Lockheed Missiles & Space Company is under an MSC contract for a solar illumination docking study.



Armstrong Unhurt in Ejection From Moon Lander Trainer

MSC astronaut Neil A. Armstrong Monday ejected and parachuted to earth uninjured from a Lunar Landing Research Vehicle (LLRV) while flying a simulated lunar landing at Ellington AFB. He was examined by a

physician and pronounced physically fit after the incident.

Armstrong had been airborne about five minutes and was flying at about 200 feet altitude when he elected to "punch out" of the LLRV. The ejection took place at 1:28 pm CDT.

Peak altitude of the flight, Armstrong's twenty-second, had been 500 feet.

one-sixth of the weight is supported by two throttleable 100-500-lb monopropellant hydrogen peroxide rocket engines. Attitude control is provided by 16 hydrogen peroxide thrusters mounted in four clusters of four each on struts extending from the central structure. Both vehicle types were built by Bell Aerosystems.

Science Seminar Hears Canadian

Dr. J. Tuzo Wilson of Toronto, Canada, will be the speaker at the monthly science seminar today in the Building 30 auditorium.

Wilson will speak on "Continental Drift and Ocean Floor Spreading" at the seminar which is sponsored by the MSC Science and Applications Directorate. The program will begin at 3:30 pm.

Wilson is principal of the Erindale College, Toronto, Canada.

An accident investigation board has been appointed by MSC Director Dr. Robert R. Gilruth. The board is chaired by Aircraft Operations Office chief Joseph S. Algranti. Members are astronaut William A. Anders, NASA Flight Research Center chief research pilot Don Mallick, George L. Bosworth of Aircraft Maintenance and Operations, and Conway Roberts of Flight Safety Office.

Algranti, Anders and Mallick have all flown the LLRV.

The LLRV crashed and burned on impact. The vehicle was one of two LLRVs at MSC. Both earlier had undergone flight tests at NASA Flight Research Center before being delivered to MSC in December 1966. Three advanced versions, designated Lunar Landing Training Vehicle (LLTV) have been delivered and are in ground test at Ellington AFB in preparation for flight tests and subsequent training flights.

LLRV propulsion is provided by a 4200-lb thrust fanjet engine which supports five-sixths of the vehicle's weight. The remaining

NASA, Boeing Sign Pact for Apollo Integration

NASA has completed contract negotiations with The Boeing Co., Seattle, for technical integration and evaluation in support of the Apollo Program. This agreement covers work which Boeing initiated under a NASA letter contract issued last June 15.

Total value of the work under the cost-plus-fixed-fee agreement, through December 31, 1968, is \$73 million. The contract may be extended as necessary.

Under the contract, Boeing will assist and support the NASA Headquarters and the manned space flight centers. The company will supply technical analysis and evaluation which assists NASA in arriving at technical decisions involving Apollo systems engineering, space vehicle integration, and flight readiness. Boeing has rendered this type support for the Apollo IV, V and VI flights.

Webb Okays Phillips Plan to Man Third Saturn V Late This Year

NASA last week announced that preparations to man the third Saturn V space vehicle will continue. The mission will be launched in the fourth quarter of 1968.

Two previous Saturn V flights—Apollo IV and Apollo VI—were unmanned. On the basis of data so far obtained from the second unmanned flight April 4, it has been decided to plan and work toward a manned flight in the preparation of the third Saturn V launch vehicle.

"However, we will retain the option of flying another unmanned mission if further analysis and ground testing indicates that it is the best course," said Apollo Program Director Samuel C. Phillips.

Phillips' recommendations were approved April 27 by NASA Administrator James E. Webb.

NASA and industry engineers have been working virtually around the clock to determine the causes, effects and solutions to several problems experienced in the April 4 Apollo VI mission. These included:

- Premature shutdown of two J-2 engines in the second stage S-II of the Saturn V.
- Failure of the third stage S-IVB J-2 engine to restart in orbit.
- A longitudinal oscillation or "pogo effect" caused by synchronous vibration of the five F-1 engines in the first stage.
- An indication that some material fell away from the area of the Spacecraft-LM Adapter (SLA).

Information developed so far indicates that the early shutdown of the two second stage engines began with the failure of a small fuel line in the No. 2 engine ignition system.

Rupture of the line in the No. 2 engine is believed to have resulted in damage which shut down that engine. An error in connection of wires which signal cutoff of oxidizer to a damaged engine caused the shutdown signal for No. 2 engine to go to No. 3 engine, shutting them both down early.

The fuel and oxidizer lines in the J-2 engine ignition system will be strengthened, and new and more stringent procedures and tests have been instituted to insure against crossed wires in engine cutoff circuits.

The vibrations which caused fuel line failures in the No. 2 engine of the second stage and which prevented the third stage engine from restarting probably were caused by the high velocity of fuel flowing through the lines and not by the pogo oscillations.

If vibrations or oscillations generated by the first stage engines occur, small amounts of gaseous helium injected into two of the five engines will cause them to vibrate at different frequencies, thus cancelling out much of the oscillation.

Airborne cameras caught discolorations in the SLA during the launch phase of Apollo VI. The dark patches appeared in the early part of the flight and apparently did no damage to the

LM Test Article or to any part of the Saturn V launch vehicle. Origin of the dark areas on the SLA is not as yet known, but Phillips speculated that they possibly were chunks of heat-protective paint sloughing off.

"We are confident that we know the cause, effects and solutions involving the J-2 engine
(Continued on page 3)



ESCAPE—Neil Armstrong takes leave of a Lunar Landing Research Vehicle (LLRV) by means of the rocket-propelled ejection seat after a malfunction cropped up during a simulated lunar landing Monday at Ellington AFB. These photos are blowups of 16mm documentary motion pictures made during the flight. At left Armstrong is shown (arrow) as the ejection seat propels him away from the craft. At right, he drifts toward the ground in his parachute as the LLRV burns after impact.



THRIFTSVILLE—Merchandise for sale in the recently-opened Ellington AFB Thrift Shop is examined by Mrs. L. Gordon Cooper, Jr., Mrs. Robert R. Gilruth, Mrs. Harold A. Benner and acting Ellington AFB commander Col. James L. Coward. The Shop is operated by the Ellington AFB Officers' Wives Club to provide funds for welfare projects.

Ellington Thrift Shop Opens for Business

The Thrift Shop at Ellington AFB recently began operations and is open to all federal employees and to civilian and contractor on-site employees.

Hours of operation are from 10 am to 2 pm on Tuesdays and

Fridays, and from 10 am to 1 pm on the first and third Saturdays of each month. Merchandise may be brought in for consignment from 10 am to 1 pm Tuesday and Friday.

The Thrift Shop retains a 10 percent commission from the selling price of consigned articles. Customers may set their own prices. In stock now are such items as clothing, baby items, appliances and furniture.

The Thrift Shop is staffed by Ellington Officers' Wives Club volunteers and profits go to Club welfare projects. The Shop is in Bldg 755 on Kirk Blvd., Ellington AFB. Telephone HU 7-1400, Ext 170.

Straight Talk from your Credit Union

By Paul Sturtevant

One of the primary facts of life about any savings program is the need for regularity—saving out of every paycheck, off the top, and not from what is left over. (If anything!)

Why does one save? Motives for thrift vary from one person to another, but there is one thing held in common by all who save: long and short-range goals to work toward.

Quarterly, semiannual or annual bills for insurance, taxes, clothing and immediate needs can be classified as short-range goals, while saving toward new appliances, furniture, cars or college funds fall into the long-range goal category.

A smart money manager will carefully plan his savings and spending programs so that he is the boss over his money and not a slave to it. This is where systematic saving at the MSC Credit Union help goals come within reach, ease those nagging financial headaches and quieten that upset stomach.

Start saving today . . . the Credit Union way.

Tech Writers Meet May 15

The May 15 dinner meeting of the Houston Chapter of the Society of Technical Writers and Publishers will feature a panel discussion on technical illustrating.

The meeting will be at the Ramada Inn on NASA Road 1, with dinner at 6:30 pm and program at 7:15 pm. STWP members and non-members may make dinner reservations at NA 2-4222, Ext 2351, or may attend the panel discussion at no charge.

Apollo Parachute Drop Successful

Another in the series of Apollo Earth Landing System tests May 1 was completed successfully at the Naval Air Facility, El Centro, Calif. The test simulated a parachute landing following an off-the-pad abort.

An Apollo boilerplate command module was dropped from 10,600 feet and main chutes deployed at 7,000 feet. The tests are to verify modifications to the parachute system to handle command module weight growth.

The Roundup is an official publication of the National Aeronautics and Space Administration Manned Spacecraft Center, Houston, Texas, and is published every other Friday by the Public Affairs Office for MSC employees.

Director Dr. Robert R. Gilruth
Public Affairs Officer Paul Haney
Editor Terry White
Staff Photographer A. "Pat" Patnesky

Weather Bureau Alters Storm Warning Signals

Skippers of powercraft and sailboats are urged to familiarize themselves with recent changes in Weather Bureau warning signals when boating in Galveston Bay and Gulf waters.

Flag and light signals formerly called Whole Gale warnings are now called Storm warnings, and are displayed when winds of 48 knots or more are expected. Day: single square red flag with black center. Night: two red lights.

Hurricane warnings will be issued to mariners and displayed as signals only when tropical storms are expected to cause winds of 64 knots or more. Day: two square red flags with black centers. Night: white light between two red lights.

Small craft warnings are hoisted when winds up to 33 knots are forecast and sea conditions are considered dangerous to small boats. Day: one red pennant. Night: red light over a white light.

Gale warnings will be displayed when winds are forecast to range between 34 knots and 47 knots. Day: two red pennants. Night: white light above a red light.

Boatsmen sailing Bay and coastal waters should not only know these warnings, but also

Your Job in Focus

Merit Promotion Program

There is a saying that the best promotion program ever devised will be criticized by several employees for every one who lauds it—it will be a "good" program to the one who gets promoted and a "bad" one to those who are not selected.

The Federal Merit Promotion program is no exception.

For the program has not brought more promotions nor has it guaranteed advancement for everyone, but it has resulted in more employees being considered for promotion and has helped to assure that selections are made on the basis of merit and fairness to all.

The purpose of the Federal Merit Promotion Program is not to reward employees for long and faithful service. Rather, it is to help management select the best talent in the ranks of the career service to meet the many challenging problems facing the nation and to assure that selections are made on a fair and equitable basis.

Because of the size, complexity and wide dispersion of the federal work force, the Civil

Service Commission does not require agency promotion systems to be uniform—an agency may have several plans for different kinds of jobs and locations. One may require passing a written test while another may rely primarily upon supervisory or group appraisals of employees being considered for promotion.

Each agency has the authority to establish the plan best suited to its needs, provided the plan incorporates certain merit principles and conforms to CSC guidelines.

Not only must promotions be made on the basis of merit from among the best qualified employees, but promotion programs must also provide for:

- Consultation of agency employees in the development and installation of the individual's promotion plans and in any changes in the plans.
- Information provided to employees on policies and procedures governing their agency's promotion program, how the program affects them and how promotion procedures are carried out.

• Consideration areas that are as broad as practicable, clearly defined, and in which jobs covered are identified.

• Qualifications and standards adequately spelled out and applied systematically and uniformly to all candidates.

• Evaluation methods for rating and ranking candidates which are reasonable, valid for the positions and applied fairly.

• Nondiscrimination in promotion selections for any non-merit reason such as race, religion, sex or politics.

• Complaints procedure that considers employees protests of any failure to observe promotion guidelines and plans.

• Release of employees selected for promotion from the positions they occupy.

The current plan, MSC Merit Promotion and Career Development Program, is contained in MSCM 3000.

Gravity Multiplier



GONDOLIERS—Newly-appointed NASA Deputy Administrator Thomas O. Paine, right, is briefed on operation of the Flight Acceleration Facility manned centrifuge by Warren Glover of Centrifuge Operations Section during Paine's recent orientation visit to MSC. At center in the centrifuge gondola is NASA Executive Officer Clare F. Farley.

Receives SSP



Harold Clayton
RASPO-Downey

Roundup Swap-Shop

(Deadline for classified ads is the Friday preceding Roundup publication date. Ads received after the deadline will be run in the next following issue. Send ads in writing to Roundup Editor, AP3. Ads will not be repeated unless requested. Use name and home telephone number.)

FOR SALE/RENT—REAL ESTATE

Five acres of land off Manville Highway on Country Road 101. MI 5-0188.

5 Bay lots from \$50 to \$100 below regular selling price. Lots located 4 blocks off Highway 146 in Baycliff. J. W. Clepper, RE 3-6473.

Dickinson—3/4-acre waterfront with private boat slip. High rise, 2 bedroom, 2 years old, furnished, drapes, carpet, paneled, gas built-ins, airconditioners, ready to move in. Very nice through. \$14,500. Don White, 534-5058 Dickinson after 5, or Jean White, HU 8-0210 — Ext. 51.

Brick 3-2-2. Deer Park, equity and assume loan, \$14,700 total. R. Gadbois, GR 9-1761 after 5.

8 month old French Provincial in Baybrook: 4 bedrooms, separate dining room and living room, large family room w/fireplace, kitchen and dinette, utility room and separate two-car garage with fenced backyard. Refrigerator, washer, dryer and miscellaneous furniture included, central air/heat, located on court, away from main traffic and apartments. Cost \$25,000—equity and assumption. Dave Peterson, GR 4-3681 after 5.

Fairmont Park, 10315 Belfast Rd., beautiful all brick excellent condition, 3 bedrooms, 2 baths, large paneled den, central air, detached 2-car garage, all electric kitchen, cedar fence, near schools, total price \$22,500, equity. 6% loan. M. P. Frank, GR 1-2848.

3-2-2 brick in Beverly Hills, central air & heat, carpeted, drapes, paneled family room, built-ins, low equity and 6% VA loan, payments \$148/mo. R. Kalishek, 946-0577.

Secluded wooded lot for sale in Dickinson. \$2400. Dwayne Weary 877-2206.

Heavily-wooded corner lot, 90 X 200 ft., Oak Hollow subdivision in Dickinson. Most surrounding area lots already developed. Good price. Don Wade, MI 9-0554.

Clear Lake City, 4-2-2, family room, central air & heat; Cul-De-Sac. Membership in recreation center included, available about June 30, Lease \$245. RE 3-7667.

Nassau Bay Townhouse for rent, furnished or unfurnished, 2 bedrooms, 1 1/2 bath, washer-dryer, double garage, complete exterior maintenance, pool and club available, shown by appointment. \$230/mo. plus utilities. Sullivan, 591-3968.

Brick 3-2-2, landscaped and carpeted, Deer Park, equity and assume 5 1/4% FHA loan. Available June 1. Behn Taylor GR 9-1479.

House for lease: 3-1-1. brick, air carpet, large trees, fenced yard. 20x20 patio (10 x 20 covered and screened). One block from elementary and Jr. high schools. Convenient to shopping centers. Twenty minutes from NASA. Available end of May. \$135/mo. Dewey Hydrick, 944-3809 after 5.

Hemifair family lodging, 4 miles from fair, 1/2 block from bus stop. Large, fully furnished, 2 br apt., \$15/day. Louis Ponce 534-4618 Dickinson, after 6.

Nassau Bay, 3-bedroom townhouse for sale in Queens Court. 2 patios and an enclosed 2 car garage. Equity and assume \$200/mo. loan. E. H. DeMouy, 591-2821.

House in Galveston Sea Isle addition for rent, perfect vacation spot, 2 bedrooms, liv-

ing room, kitchen, and 2 baths, swimming pool, tennis court, fishing pier, rent boats and restaurant, 2 blocks from beach, \$100 a week or \$15 per day. Mary Campbell, 946-4949 after 5.

FOR SALE—AUTOS

29 Model A Ford 2-dr. sedan, mechanically sound, body in near-excellent condition, runs good. Larry Arnim, HU 8-2757 to see.

64 VW sedan, black w/red interior, sunroof, whitewalls, radio, tinted front window, clean, 28,600 miles. \$975. Harold Atwater, HU 8-3662.

65 Buick, LeSabre custom 400, excellent condition, completely equipped. \$1800. John Leonard, 944-4997.

67 Datsun 1600, silver, blk int, \$1895 cash. Army calls! Brozowsky, HU 8-1375.

Pickup truck — Completely rebuilt, this 1950 Chevrolet 1/2-ton pickup truck is unsurpassed mechanically. Only personal observation will tell the story. J. A. Stephens, HU 7-0095.

65 Corvette convertible, 350 HP, 4-speed, air conditioned, AM-FM, power disk brakes (front and rear), T. White, 488-3400.

67 Mercury Cougar, has A/C, radio, power steering, disc brakes, 320-HP, luggage rack, 11,000 miles, original cost was \$4300 and will sale for \$2800. R. H. Bendler, 488-3852.

65 VW sedan, red w/white interior, new whitewalls, radio, tinted front window, new battery and engine tuneup. Very clean. Cheap. Mary Brewer, Baytown 422-7304.

66 Mustang, ivory with red interior, 6 cylinder stick shift with console, radio, new white sidewalls. \$1375. Behn Taylor, GR 9-1479.

62 Pontiac, Catalina, automatic transmission, power and air, nice interior, rough exterior, runs good. \$400 or best offer. Behn Taylor, GR 9-1479.

1959 Chevrolet 1/2-ton pickup, completely reconditioned including new tires, shocks, exhaust, battery, generator, etc. and including new custom cover \$700. D. G. Wiseman, 534-3802, Dickinson.

66 Chevrolet Bel Air V-8, 4-door hardtop, air, automatic transmission, power steering, radio, tinted glass, 4 almost new Goodyear Custom Power Cushion whitewalls. Like new, inside and out. 32,000 miles. \$2000. Sharp, MI 4-5831.

61 Chevrolet Bel Air, 6-cylinder, standard transmission, new tires, 68 plates. Good work car, \$275. Sharp, MI 4-5831.

57 Lincoln Premier, Landau (4-dr. hardtop). 2-tone green/white. Luxury car—300 hp, automatic, air, dual heaters, power (brakes, steering, windows, seat), electric door locks, town and country automatic seeking radio with electric antenna, etc. Excellent condition, \$300. H. Kyle, HU 2-7789.

67 Mustang, 2 dr. hardtop V-8, air conditioned, automatic transmission, console, radio, heater, power steering, power brakes WSW tires, tinted glass all around, 13,600 miles, excellent condition, \$2350. S. L. Whitley, HU 8-0056.

FOR SALE—MISCELLANEOUS

16 ft. fibreglas boat, big two-wheel tilt trailer, 100-hp Mercury motor, canopy. MI 5-0188.

Mobile home for lease, furnished, air. Will relocate to your choice area, if on a long-term lease. Reasonable rent. Floyd A. Turner, RE 3-7667.

Racing bicycle, Atala Grand Prix model, handmade in Italy, 10-SPD, only 27 lbs, original cost \$140, sell \$65. Ron Hagood, WI 8-2870 Texas City after 6.

1955 MG-TF-1500 engine and transmission, engine needs minor repair, transmission in excellent condition. Sell both \$150. Ron Hagood, WI 8-2870 Texas City after 6.

Lone Star 16 sailboat with galvanized tilt trailer, 4 life jackets, masthead fly, bottom paint, tarpaulin, 3 1/2-hp outboard, all in excellent condition for \$1600 firm. Ed Simon, 488-4043.

Motorcycle, 441 c.c. Lunge 1967 BSA Victor, inspected and licensed, perfect scrambler. D. V. Massaro, HU 2-7976.

Bicycle, 26 inch girls, 3 speed transmission, hand brakes, one year old, perfect condition. \$20. R. L. Pereboom, MI 5-6043.

Framus 12-string guitar with case \$100. Bill Gravett, MI 4-4468.

VW luggage carrier, canvas covered, heavy wire frame. \$30 new (Sears), sell for \$15. R. Kalisher, 946-0577.

Sears air conditioner, 18,500 BTU, 3 years old, \$125. Welded wire fence, 80' long, \$10. Steel fence posts, \$.50 each. Bill Leverich, 488-1186.

Theory of Plates and Shells by Timoshenko and Woinowsky-Krieger and Theory of Elastic Stability by Timoshenko and Gere, latest editions, new, no marks. Lee Moore, 645-8612 after 6.

Coldspot refrigerator, perfect for summer camp/beach cabin. \$40. John Clawson, 534-5213, Dickinson.

Iron single bed with mattress, chrome dinette suite with 6 chairs, box spring and mattress for double bed. Bert Matthews, 591-3485.

Mobile Home, 1966, 60x10, 3 bdrm, owner being transferred overseas, \$3900 or \$500 and take up payments of \$75.39. Robert W. Thomas, 932-2654 League City.

1/4-carat diamond engagement ring flanked by 6 diamonds. Matching wedding ring has 9 diamonds, platinum fishtail mounted, yellow gold band. Worn 1 month. Original cost \$500. Doalan, 946-8376 after 5.

Piano, just refinished and tuned, small 77-key, easily moved. \$250. Sayers, 591-2395.

Light brown rug with floor pad, approximately 13' X 15', \$20. R. B. Lang, HU 8-0149.

Stud service: AKC registered Golden Retriever: an intelligent, gentle, well proportioned animal with a beautiful coat. Fee: choice of litter. R. O. Workman, Dickinson 534-3446.

Girl's bicycle, 24", coaster brake, 1.75" tires, chrome rims, \$10. H. F. Erickson, MI 9-0396.

1967 Honda C110 (50cc Sport) 700 miles, adult owner. \$175. Charley Poe, HU 8-2176.

16 ft. Glasspar, 75 hp Johson, Little Dude tilt trailer, extras, will demonstrate. \$995. Metal wardrobe closet, \$10. 35 mm Canon half-frame camera. Charles Clarke, 877-2426.

4 Delta mags (ET-II) fit all General Motors cars, 14" x 6" and locks \$100. 2 wide ovals H70-14", whitewall, 4 ply, tubeless \$25 each (driven 100 miles). Charles Krpec, MI 5-6089.

8 foot Herron cab-over camper, sleeps four, butane stove and light, ice box, closet, etc. Jacks included, \$595. Also available: used and battered 1963 Ford, LB-WB, pickup truck with overload springs and 2 new 6-ply tires. Poor condition for camper, but good transportation, \$600. Take all for \$995 cash. Jim Derbonne, 534-3669.

Solid-oak bookcase headboard, footboard and frame for single bed, excellent condition, \$20. Richard E. Stanton, 932-2982 Encyclopedia, new; take up payments \$13 per/mo. Sacrifice \$60. Ron Roe, 946-6958.

AKC Miniature Poodle pups, 8 weeks old. 2 males, \$60 each; 2 females, \$50 each. Robert E. Flaherty, HU 9-8410.

8 mm movie outfit: camera is Kodak with automatic electric eye exposure control, zoom lens, and case. Projector is Argus showmaster with variable speed forward, reverse, or single frame and zoom lens. Like new. Sell separately or 1st \$100 for both or make offer. Bob Lindemuth, 944-0741.

Zodiac calendar watch with day, date, month, and moon phase, works perfectly, \$20. Speidel twist-o-flex bank, \$4 extra. Argus C-3 35 mm camera, works perfectly, \$15. Admiral 23" TV, \$35. Or \$65 takes all. Bob Lindemuth, 944-0741.

Trailmaster Honda 1965, 2300 miles, buddy seat, chrome rack, mirrors, helmet and goggles, like new condition, adult rider, custom-made cover. \$250. Underhill 649-3021 after 6.

Nylon pink plush carpet 10' X 10' and rubber pad, perfect for a bedroom, both carpet and pad \$69. New American Standard garbage disposal (in carton) \$30. Brunswick bowling ball and bag. \$10. Baby car bed (can be converted into car seat) \$4. Beautiful decorator vase 29" high \$8. Jack H. Cohen, HU 8-3171.

Mexican Olympic silver coin that was advertised on TV and newspaper by First National. \$2.70 each. R. H. Bendler, 488-3852.

1967 Honda Trail 90, 900 miles, w/helmet, like new \$250. N. Lamar, 944-5652.

Baby car seat, used for 1 year, blue. Original cost \$14, sell for \$5. Tom Gallagher, HU 7-0149.

Estate gas range, good condition, has center top grill, separate oven and broiler, \$35. Gibson air conditioner, window unit, 14,500 BTU, \$85. John Lottinville, HU 8-3128.

Sailboats: new 13'9" Scorpion board-boat \$475. Bob Ward for demonstration 591-2182. Other used sailboats available.

Matching couch and chair, 2 matching lamps, and 2 end tables, total \$65. McClellan, GR 1-1262. Tammy Jay Apts, LaPorte.

Starkline crib, white with bunny decals. (cost \$39) and matching mattress (cost \$18) plus 5 fitted crib sheets, sell all for \$25. Little boy's western boots, size 7 1/2 D (fits 2 or 3 yr. old) and 10 1/2 D (fits 4 or 5 yr. old). Both pair like new \$2 each. Large selection of little boys suits (dress and casual) sizes 3, 4 and 5 plus matching ties and 2 hats. All in good condition, some like new. All for \$5. Bell, 591-2340.

Surfboard, Dextra custom, 9'8", speed skeg, excellent condition, \$80. K. A. Ligrani, 877-4405 after 5.

Ham radio equipment, Heathkit SB-200 power amplifier \$160, reconditioned RME 4350 receiver \$100. D. G. Wiseman, 534-3802 Dickinson.

Men's clothes custom tailored to your measurements. Arland Actkinson, 591-4501.

Non-working TV set (CRT problems), make offer. Working blender, \$5. Sharp, MI 4-5831.

10'x12' Sears umbrella tent, excellent condition, \$75. Sharp, MI 5-8911.

1-wheel trailer, new tire, covered top, 3'x5' (approximately 2' deep), good for camping, \$50. Sharp, MI 5-8911.

Learn to fly with the Aero Club Inc. for MSC and contractors. Cessna 150 \$7/hr wet; C-172 \$9/hr and K-Bonanza \$16/hr. Instructor \$5/hr. Only \$50 down \$11/month 50% refundable. Robert J. Ward, 877-3187.

18,700-BTU window air conditioner, used four months. Hal Bishop, HU 3-5331 (No home phone).

WANTED

Will share driving or ride. Freeway Manor to MSC, 8 to 4:30. Don Frisbee, 946-7193.

If anyone has a workable tape recorder tucked away and not in use, would you lend same to an elderly shut-in lady for a couple of months for purposes of dictating her autobiography? Ada W. Moon, JA 8-6079.

Aluminum canoe 15 or 17 ft: outboard motor 5 hp or less. V. L. Wegner, HU 8-1967.

Wanted to buy: US coins and silver certificates. Have Mexican Olympic coin for sale or trade. R. H. Beadle, 488-3852.

4 bedroom home within 10 miles of MSC. Prefer location outside subdivision area. Must have approximately one acre of land. H. F. Kline, 433-5190.

Tigerama card: need right half \$1,000. Will split. I. Jacobs, Dickinson 534-3272, after 5.

Will share driving or ride with young woman from Sunnyside Area to MSC, between the hours of 8:15 and 4:45. Jackie White RE 3-4231 or HU 3-4431.

Good homes for half-Persian kittens. Free. Mother is pedigreed, grand champion blood line blue cream. Dave DeAtkine, HU 7-1556.

Card Party 10 of spades. Buying silver certificates at \$1.51 each and also silver coins. R. H. Bendler, 488-3852.

Young man to share apartment on Old Galveston Road. Present roommate getting married. B. Schneider, 645-7061.

Aero Club Sets Private Pilot Ground School

The Aero Club, Inc. May 16 will begin a private pilot ground school utilizing the Sanderson visual system. The first class will be in Room 517, Bldg 2 at 5:15 pm. Tuition will be \$15 and the course is open to non-Aero Club members.

To register, attend the first session or call Charles Krpec at MI 5-6089.

Aero Club training and safety activities are partially subsidized by the MSC Employee Activities Association to provide the low-cost instruction. The Club is a non-profit corporation operated for MSC and contractor employees and their families and emphasizes private and instrument instruction and flight safety.

Phillips Plan

(Continued from page 1)

failure and the launch vehicle longitudinal vibration problems," said Phillips. "Analysis and ground testing will continue to gain for us an even more complete understanding of all aspects of Saturn V performance and operation."

Co-op of Month



DEFINITE ASSET — The school hat worn by Thomas B. Willen is that of a senior in aeronautical engineering at the University of Cincinnati; his MSC hat hangs in the Guidance Analysis Section of the MPAD Guidance and Performance Branch where he presently is working on the short-burn logic in the LM guidance system. Willen is "industrious and works well on his own with a minimum of supervision. The quality of his work is comparable to that of more highly experienced engineers . . . He has been a definite asset to the section," say his superiors.

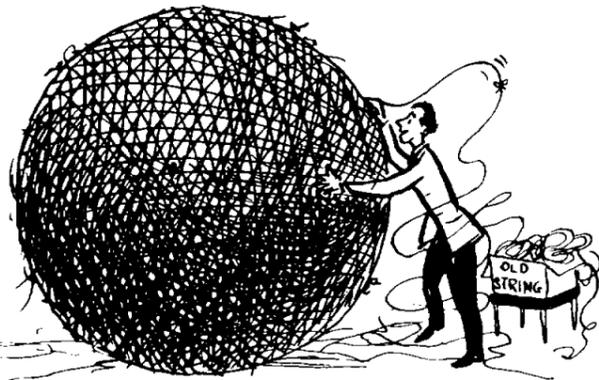
Male roommate needed for two-bedroom apt. at Balboa in Nassau Bay. I am 26, have BS degree, and am a non-smoker. Leo Waltz 591-2286.

Young man needs roommate for apartment in MSC area. Present roommate moving. Arland Actkinson, 591-4501.

Ride or riders wanted from Gilbert Apartments, 7925 Gulf Freeway, to MSC, 8-4:30 shift. Leota White, MI 3-3141.

Female roommate to share two-bedroom apartment by June 1. Faye Abston, 932-4625 (Webster) after 5.

1962 or later model clean compact station wagon, will trade for 1962 sports car in good condition. Thompson, 946-7768.



SAVING IS A GOOD HABIT, BUT...

You Can Do It Better
With U.S. Savings Bonds
On The Payroll Savings Plan

Tells It Like It Is



BOND KICKOFF—Congressional Medal of Honor winner Ssgt Charles B. Morris, right, was featured speaker at the May 3 MSC Savings Bond campaign kickoff meeting of division canvassers. Morris earned the CMH during a search-and-destroy mission in Viet Nam in which he was wounded four times while assisting other wounded men in his squad and defending the group's position. Others at the kickoff table are, left to right, MSC Bond campaign chairman Dexter Haven, US Treasury Savings Bond area manager Harry DeDeaux, MSC Director of Administration Philip H. Whitbeck and Morris.

UofH Clear Lake Center Has Summer Registration June 5

Registration for University of Houston Clear Lake Center summer semester classes June 5 will be held in Room 257, Bldg 16 from 9 am to 12 noon for students enrolling in Clear Lake Graduate Center classes only. Summer semester classes begin June 8 and end August 22.

There will be no late registration, and combination students (part campus, part Clear Lake) must first register at the Main UofH campus.

Math and physics department counselors will be on hand during registration. Students working on other major must have their program slips signed at the UofH campus before they can enroll for Clear Lake classes.

MSC employees have until May 29 to submit Application for Training forms (MSC Form 75) to the Employee Development Branch (BP3).

Clear Lake Graduate Center classes offered will be Math 478A, 3-5 pm T-Th; Math 683, 3-5 pm M-W; Physics 697, 7-9 am T-Th.

NASA Picks GE For AAP Support

NASA will negotiate a contract with General Electric Co., Apollo Systems Div., Daytona Beach, Fla., for engineering support of the Apollo Applications Program.

Estimated cost of the one-year, cost-plus-fixed-fee contract is \$3.5 million.

The company will provide engineering support in the areas of quality and reliability, configuration and data management, test, and checkout. The work will be similar to that which the company has provided to the Apollo Program since 1962.

The contract will be directed by the Apollo Applications Program Office, NASA Headquarters.

Campus courses offered during the summer semester which may be of interest to MSC employees include ME 730-Applied Heat Transfer, IE 567-Advanced Computing Techniques, IE 730-Operation Statistics, IE 363-Engineering Statistics I, IE 465-Principles of Industrial Management, and IE 471-Operations Research I.

New ISA Group Formed in Area

The Instrument Society of America recently opened for membership its Automatic Control Systems Division in the southeast Texas area. The new division covers the fields of process control and simulation, including supervisory and direct digital control, feedback and adaptive control systems, as well as the mathematical formulation of process models.

Division activities will include plant trips and noted speakers on automatic controls, many from the local area.

Apollo and Houston ISA section members or non-members may join the new division by sending name and address to Barry Freedman, Monsanto Company, P.O. Box 711, Alvin, Texas 77511. Additional information may be obtained from Freedman at Alvin OL 8-5111, Ext. 442.

Uniform Wage System Approved To Replace Agency Wage Boards

President Lyndon Johnson has approved a new Coordinated Federal Wage System which will cover the Government's 800,000 wage board employees in trade, craft, and laboring occupations. Federal agencies will begin implementing the program in July 1968.

The new system, when operational, will replace the many separate wage board systems now maintained by the individual departments and agencies. More than 50 different agencies have wage board employees in over 300 local wage areas throughout the United States.

Policies announced for the new system conform with the President's memorandum of November 16, 1965, which directed the development of common job standards and wage practices to insure interagency equity in wage rates based upon statistically valid wage surveys.

The Coordinated Federal Wage System carries out the principles set forth by the President that wage shall be in accord with prevailing rates and that there shall be equal pay for substantially equal work and pay distinctions in keeping with work distinctions.

The new system was developed by the Civil Service Commission through two years of intensive staff study and consultation with agencies and union representatives. It will insure that trades and labor employees performing similar work in the same local wage area receive the same rates of pay in all Federal agencies.

Basic features of the new system include:

- Uniform requirements for determining prevailing rates based upon data collected from local private employers.

- Improved statistical validity of pay surveys.

- Common standards established by the Civil Service Commission for placing jobs in the correct pay grades.

- Joint agency-union committees to participate in policy development and in the operational features of the system.

The system will operate along these lines:

The Commission will prescribe uniform policies, procedures, and job grading standards. Agency heads will continue to set pay. For each local wage area, a single agency will have responsibility for making surveys and issuing wage schedules, under the policies and procedures prescribed by the Commission. All agencies will then set the pay of their employees in the same area under these schedules.

Laundry workers, food service workers, and custodial workers, now paid under special wages schedules by some agencies, will be brought into the regular wage schedule.

Agencies will grade their positions under standards issued by the Commission. An employee dissatisfied with the grade of his job can appeal within his agency and to the Commission.

Agencies and unions will be represented on a National Wage Policy Committee which will advise the Chairman of the Civil Service Commission on basic policy matters.

Labor organizations also will have an important role in the wage determination process through participation in Local Wage Survey Committees and in collecting wage data, and through participation in Agency Wage Committees at the agency

headquarters level.

The system will provide needed flexibility in special situations by permitting special rates for unusual occupations or where required for recruiting, and by allowing those agencies which now set their wage schedules through negotiations with employee unions to continue to do so.

When the new system is installed, any employee whose current rate is higher than it would be under the new system will have his existing rate preserved.

The policies regarding pay fixing for Leader and Supervisory positions are tentative. They are to be reviewed on completion of a comprehensive study of private industry practices for these groups which is now being made by the Civil Service Commission and the Department of Defense.

Although the target date for beginning operations under the new system is July 1968, about two years will be required to convert employees in all areas from their agencies' wage systems for the new system.

25 Years Service



Roy Freeman
RASPO-Downey

Skyrovers Boast Steady Growth

Early in 1965, six flying enthusiasts got together and formed the Skyrovers Flying Club. Their only piece of equipment at that time was a two-place Cessna 140, for which they pooled their resources to buy.

Now, three years later, the Skyrovers have 34 members and four aircraft—two Cessna Skyhawks, one Cessna 182 and a Piper J-3 Cub.

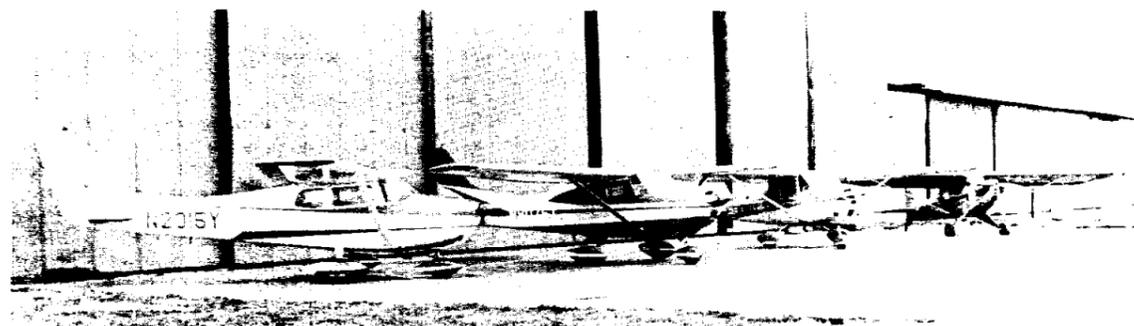
Ferrying the J-3 crosscountry from the West Coast was almost

like a page out of the old barnstorming days. A group of members flew in a Skyhawk to Whitman Airpark in San Fernando, near Los Angeles, Calif., to buy the Cub, and a student pilot member was chosen to fly it back to LaPorte. His log book carries an entry stating, "Preflight planning checked and found OK to fly crosscountry from Whitman Airpark to LaPorte, Texas." He made the 1300-mile return flight, but with five emergency repair stops enroute.

Skyrovers operate on the premise that dues should pay for fixed expenses while flying charges should pay for fuel and aircraft maintenance. Current membership dues are \$500, fully recoverable when a member bails out of the club. Monthly dues of \$15 gives a member his first hour of flying free, with the J-3 Cub costing \$4.50/hr., Skyhawks \$5.50/hr., and the Cessna 182 \$8.50/hr.—all rates include fuel.

The Club has 12 members who have progressed from first solo to earning their private pilot licenses. Club treasurer Dick Grow estimates that Skyrovers have \$24,000 worth in aircraft, while having a total debt of less than \$3500.

Skyrovers membership is open to MSC and contractor employees, whether experienced pilots or never off the ground. Contacts at MSC are Skyrovers president Clyde Waters at Ext 6326 or treasurer Dick Grow at Ext 5827.



SKYROVERS FLEET—Two Cessna Skyhawks, a Cessna 182 and a Piper J-3 Cub make up the fleet of aircraft owned by the Skyrovers Flying Club. Skyrovers fly from LaPorte Airport and membership includes many MSC and contractor employees.